ABSTRACT OF THE DISCLOSURE

Methods, apparatus, and computer program products are disclosed for determining the upstream signal transmission quality of a cable modem. Faulty cable modems, often having degrading RF transmitters, can cause undesirable noise in the entire upstream spectrum of a cable plant. The most damaging manifestation of this undesirable noise is in the form of a noise spur; a sudden rise in an otherwise unharmful noise floor. A media access control (MAC) unit in a CMTS assigns a normal time slot to a cable modem being tested for its upstream transmission quality. It is during this normal time slot that the cable modem can transmit data upstream. An FFT generator or engine operating in conjunction with the CMTS is informed of this normal time slot. A dummy time slot, not assigned to any cable modem, is created and the FFT generator is informed of the dummy time slot. The FFT generator, as well as the upstream receiver in the CMTS, is certain that no data will be transmitted during this dummy time slot. A number of FFT measurements of the upstream channel are generated during the normal time slot and during the dummy time slot. FFT measurements of the upstream spectrum taken during the normal time slot are compared to FFT measurements taken during the dummy time slot. Through this comparison, undesirable noise spurs, if any, can be detected in the upstream spectrum caused by the cable modem being tested.

Sub A4